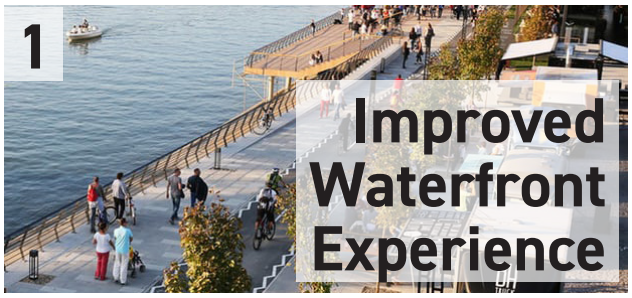
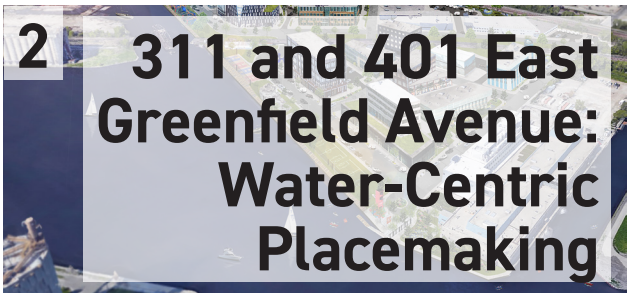
6 CATALYTIC PROJECTS

Following the adoption of this Water and Land Use Plan, the recommendations in the preceding chapters will guide the efforts of the City of Milwaukee, Harbor District Inc, and our partners in advancing plan goals. While these recommendations all play a role in achieving a world-class revitalization of Milwaukee's harbor, the planning process also identified a smaller number of priority projects that can unlock the potential for new investment in the area and spur the other development envisioned by stakeholders for the Harbor District.

The successful implementation of the catalytic projects highlighted in this section of the plan will greatly advance many of the goals and recommendations identified throughout this plan. These catalytic projects were chosen to capitalize on the major opportunities in the Harbor District, directly address some of its biggest challenges, and demonstrate commitment and momentum towards the overall development and growth of the District.

The catalytic projects are organized into two site specific projects (East Greenfield Avenue and Grand Trunk) and two concept categories (Improved Waterfront Experience and Access and Mobility Improvements) that address major obstacles to the District reaching its full potential. Each of the four catalytic projects contains a series of actions that collectively contribute to the full vision for each catalytic project.





Improved Waterfront Experience

The most important element to the Harbor District's unique identity and character is the water. The confluence of the three rivers as they meet and flow into Lake Michigan defines this part of the city. Yet, almost all of the Harbor District's nine miles of waterfront is off-limits to the public. Only at the Milwaukee County Boat Launch can one actually get to the water's edge in this neighborhood shaped by water.

This separation of the water from the land was intentional as the city's rivers and lake were reshaped to serve industrial Milwaukee. At the time, it made sense to limit waterways and waterfronts for use by the ships and factories that needed them. However, the city has changed, its economy has changed, and its relationship with water has changed. The Harbor District represents an opportunity moving forward to develop a new type of waterfront that invites the public to explore and enjoy its shore and waves, maintains its role as a working port and commercial harbor, and provides space for natural ecosystems to flourish.

This catalytic project lays out a series of recommendations that will move the Harbor District towards this new vision of a multi-purpose multi-use waterfront. Recommendations include new public spaces and amenities to allow people to access the water and projects to improve water quality ensuring the experience of visiting the water is enjoyable.


Waterfront Improvements
Harbor District
Proposed Riverwalk
Proposed Waterfront Park
Canoe/Kayak Launch
Trailered Boat Launch
Public Waterfront
Trash Wheel
Pittsburgh St
Florida St
First St
Water St
Milwaukee River
National Ave
Washington St
Greenfield Ave
Second St
Kinnickinnic River
Mitchell St
Becher St
First St
Bay St
Lincoln Ave
Kinnickinnic Ave
Chase Ave
INTERSTATE 794
INTERSTATE WISCONSIN 43
INTERSTATE 94
Jones Island
Lake Michigan
Confined Disposal Facility

Riverwalk

To reconnect the city to the waterways of the Harbor District, a new Riverwalk system should be created that extends along the entire western shore of the Harbor District from the Broadway Bridge on the Milwaukee River on the north to the Chase Avenue Bridge on the Kinnickinnic River on the south. This would be mirrored by a riverwalk system beginning on the eastern shore of the Kinnickinnic River at the Chase Avenue Bridge and extending north to the Union Pacific Rail Swing Bridge just north of the Grand Trunk site.

This new Riverwalk system would create a new continous urban pedestrian route and include amenities and destinations that would allow users to experience the Riverwalk and waterfront in different ways. When fully built out this proposed Riverwalk extension would add roughly 4 miles to Milwaukee's Riverwalk system.

While the Downtown Riverwalk exists in a fairly developed and built up area, the proposed Harbor District Riverwalk has some unique opportunities and challenges given the industrial context of the area. There are large vacant parcels along the proposed Riverwalk route that would allow for larger public spaces and a variety of waterfront amenities to be included that were not possible downtown due to space constraints. These opportunities are described in the following sections.

Milwaukee's Downtown Riverwalk was started in 1993 as a public-private partnership project and has developed into a 3.1 mile system stretching from the former site of the North Avenue Dam all the way to Lake Michigan. The Downtown Riverwalk provides almost uninterrupted public access to the Milwaukee River throughout downtown and has helped reconnect our city to our namesake river.

It took great vision in 1993 to put in place the zoning and partnerships that would lead to the eventual development of the Downtown Riverwalk, as initial construction happened slowly as properties were redeveloped or funding became available. Fast forward to today and $52 million dollars has been invested in constructing the Riverwalk, adjacent properties have seen a $1 billion increase in property values since construction began, and the project is a finalist for the Urban Land Institute's Global Awards for Excellence.

A concept drawing of a Riverwalk in the Harbor View sub-district

A concept drawing showing a Riverwalk section with a working marina and boat being launched.

Same Riverwalk section as to the left, outside of operational hours.

All images on this page by UWM Community Design Solutions

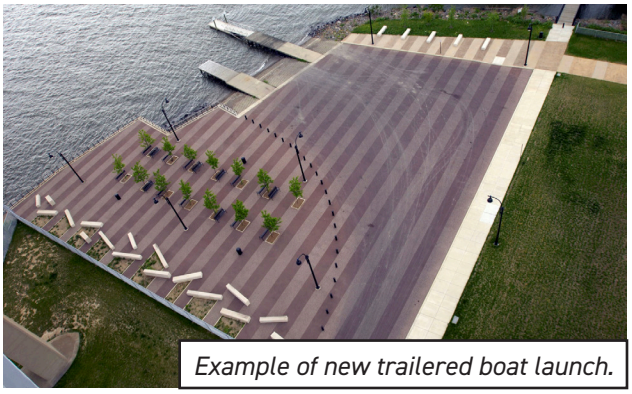
Water Access Points

Once at the water's edge it is important to provide a variety of experiences and amenities that encourage people to explore. Boardwalks, shared-use paths, natural sloped shorelines, fishing piers, canoe and kayak launches, and many other waterfront treatments can appeal to a wide variety of users and keep visitors coming back time and time again.

Five high priority locations have been identified for canoe/kayak launches along the Harbor District waterfront (see map), although additional locations may be identified in the future. The current Milwaukee County Boat Launch is a challenging site for several reasons: the strong wave action coming in the mouth of the harbor, steep ramp, and limited parking. Should the opportunity arise, it is recommended that a new public boat launch be developed further south on a portion of 900 South Water Street that would provide more parking and a safer launching environment.

Canoe/kayak launch.

Public fishing waterfront.



Example of new trailered boat launch.

The southern portion of the former Solvay Coke & Gas site and the former Fire Boat Slip on the Grand Trunk Site are recommended locations for natural sloped shorelines that would provide space for aquatic habitat. Additional natural sloped shorelines could be developed behind dockwall structures in areas such as the former rail car ferry slip on the Solvay Coke & Gas site. This concept, explored during the Waterfront Innovations Design Charrette, would provide a protected space for aquatic habitat and also be more accessible to visitors wanting to explore.

The waterfront area underneath the I-794 elevated highway between Port Milwaukee's liquid cargo terminal and confined disposal facility (see map) is recommended for a public space that provides opportunities to fish and walk along the lake side of the Harbor District. This area could be connected to the Oak Leaf Trail and communities to the south via a new shared-use path along the lakefront and South Lincoln Memorial Drive.

Conceptual rendering for an improved Milwaukee County Boat Launch at Bruce Street.

Rendering by SEH

Waterfront Parks

The Riverwalk system and improved water access points bring people to the water's edge and provide unique spaces to interact or experience the water, but the Harbor District also has opportunities to provide more expansive public spaces along the waterfront. Opportunities abound to develop small pocket parks along the riverwalk system that connect the waterfront to residential neighborhoods to the west and much larger parks that provide spaces for recreation and exploration.

Smale Riverfront Park in Cincinnati.

In the Harbor View District, public right-of-way stub end streets at Oregon, Florida, Bruce, and Walker Streets should be preserved as public space and provide connections from South Water Street to the Riverwalk. These spaces should be designed in a manner that makes it obvious they are publicly owned and invites people to travel to and through them to the Riverwalk. These pocket parks will also preserve view corridors to the water that help connect neighborhoods to the water and Riverwalk.

In the East Greenfield Avenue District, there is a significant opportunity to create a much larger waterfront park extending on the west bank from Greenfield Avenue to Kinnickinnic Avenue. This large park should include both active recreational spaces (sport courts, exercise equipment) and passive natural spaces. For further detail on this park space, see the East Greenfield Avenue Catalytic Project.

Across the Kinnickinnic River, the Grand Trunk wetland provides the area's sole opportunity to showcase its ecological history. The 6-acre wetland here should be restored to provide habitat and a space for people to interact with water in a quieter and more natural setting. The former Fire Boat Slip should be developed as a waterfront park that includes a canoe/kayak launch and sloping natural edges. For more details on this park space, see the Grand Trunk Catalytic Project.

Continuing south on the Kinnickinnic River, two parks, Lincoln Field and Baran Park, front the river for more than a half mile. However, each park turns its back on the riverfront by providing no trails or amenities leading to or at the water's edge. These existing parks provide an opportunity to create new water access points much closer to where residents live. New trails should be developed that connect the riverfront portions of the park to other park amenities, streets, and the future Riverwalk. Areas along the riverfront should be identified for improvements to allow for easier and safer fishing and exploring of the Kinnickinnic River.

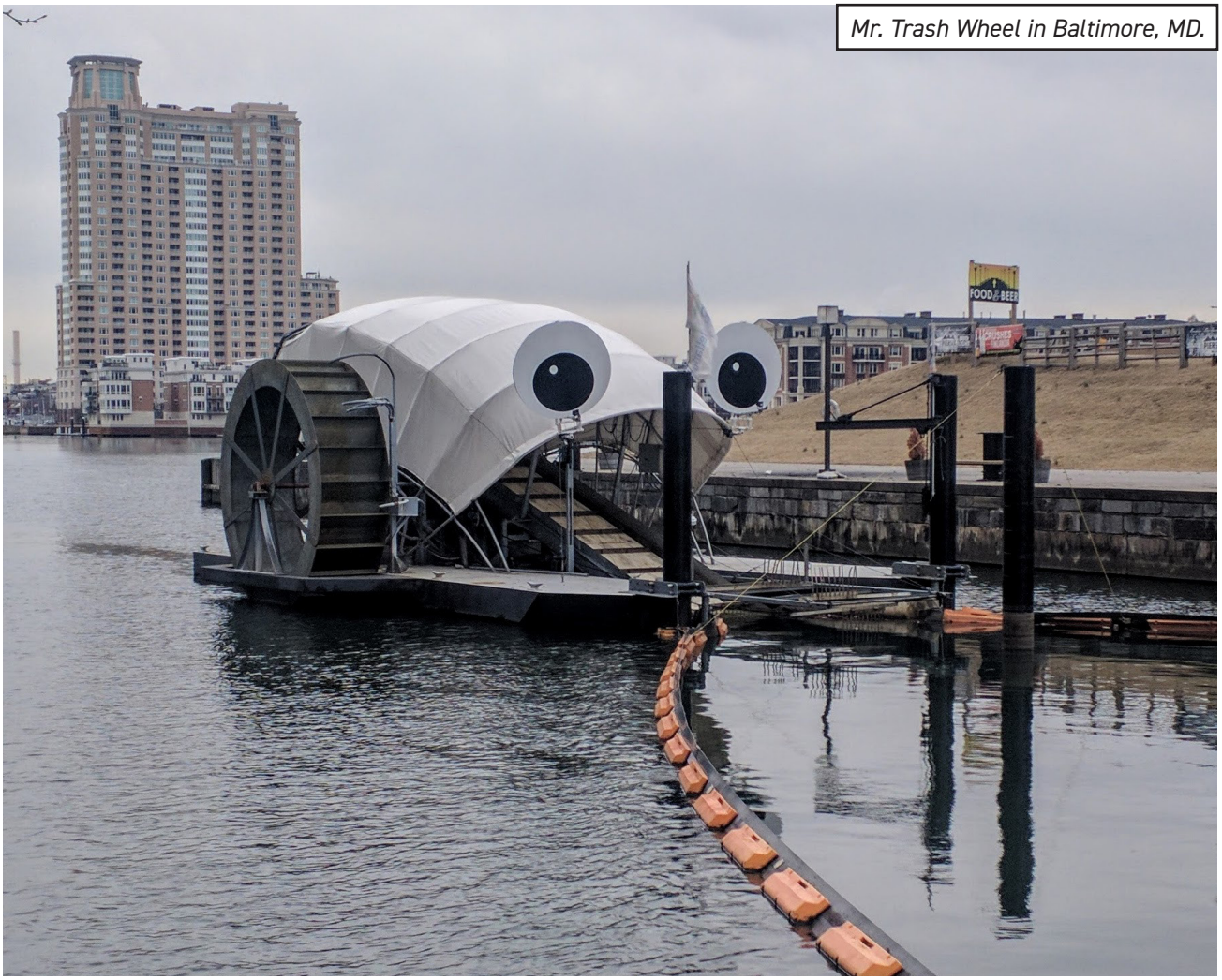
Active park space.

Natural park space.

Trash Wheel

All of the above improvements are designed to bring people to the water's edge to enjoy the waterways of the Harbor District. That experience assumes that interaction with water is an inherently enjoyable experience, which is not always the case. While there have been great strides made in improving water quality in recent years, anyone who has visited the Harbor District after a large rainstorm can attest to the accumulation of trash on the surface of the water. New technologies are being developed that can aid in cleaning urban waterways and improve the waterfront experience.

As developed and implemented in Baltimore, a Trash Wheel should be installed that will collect surface trash floating down the Kinnickinnic River and deposit it directly into a dumpster. The recommended location for the Trash Wheel is immediately upstream of the Becher Street bridge where it could be serviced via the adjacent MMSD owned property. The installation of a Trash Wheel would keep the majority of the Harbor District's waterways free of floating trash and allow the Lynrd Skymmr Trash Skimmer to focus efforts on the Milwaukee and Menomonee Rivers.



Mr. Trash Wheel in Baltimore, MD.

311 and 401 East Greenfield Avenue: Water-Centric Placemaking

Tanner Springs Park in Portland, OR

Two parcels at the center of the East Greenfield Avenue sub-district - totalling roughly 60 acres with 3,000 feet of waterfront - offer the largest development opportunity in the Harbor District. Together they represent Milwaukee's most significant opportunity to define what a twenty-first century working waterfront looks like, and to set the tone for future development in the remainder of the Harbor District.

The sites can be a catalyst for Milwaukee's water-centric city goals in two primary ways: supporting job creation and economic development; and creating a waterfront that becomes a model for other cities throughout the Great Lakes and beyond. Additionally, as a high-profile, publicly owned site, 401 E. Greenfield gives the public sector a chance to set the tone for future development in the area.

photo by Kristian Vaughn

401 East Greenfield Avenue
Former Coal Storage

This 13-acre triangular parcel is owned by Port Milwaukee and fronts on Greenfield Avenue (across the street from the School of Freshwater Sciences), the Inner Harbor, and Union Pacific tracks. Its deep-draft waterfront offers the opportunity to dock ocean-going vessels. Challenges include soft soils, the presence of a filled slip in the middle of the site, potential environmental remediation still being quantified. 401 E. Greenfield also includes a small waterfront parcel owned by Kadinger Marine that could be included in the larger development whenever its use transitions.

photo by Kristian Vaughn

311 East Greenfield Avenue
Former Solvay Coke and Gas Co.

Currently owned by We Energies, the 46-acre property is in the midst of a major environmental clean-up. Assets of the site include an extensive waterfront stretching from the deep water of the inner harbor to the smaller Kinnickinnic river channel; freight rail service; and a large slip (formerly home of the municipal carferry). Challenges in addition to the environmental remediation include soft soils, limited street frontage, and constrained access.

Economic Development

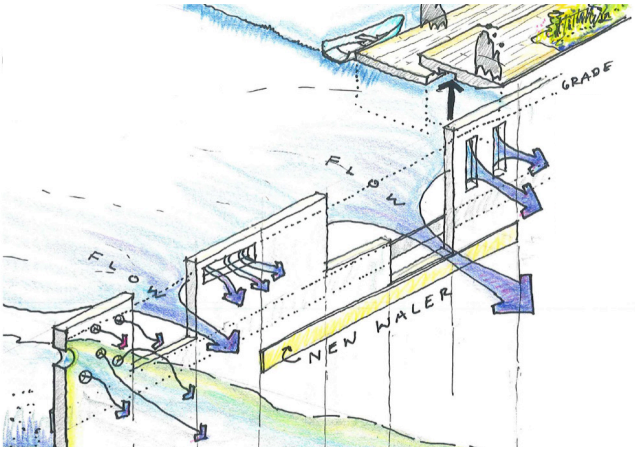
An urban style, mixed commercial and light industrial park here has the potential to create 2,200 jobs and $193 million in new property value. Two neighboring anchor institutions - the UWM School of Freshwater Sciences and the Rockwell Automation headquarters - could assist in attracting future tenants that build on Milwaukee's existing strengths in water research and technology and/or advanced manufacturing. In partnership with the Global Water Center, the sites and in particular the waterfront could become a testing ground and showcase for new water technologies. Stormwater management and a demonstration wetland could showcase Milwaukee's leadership in green infrastructure, and provide a job training resource.

A Model Water's Edge

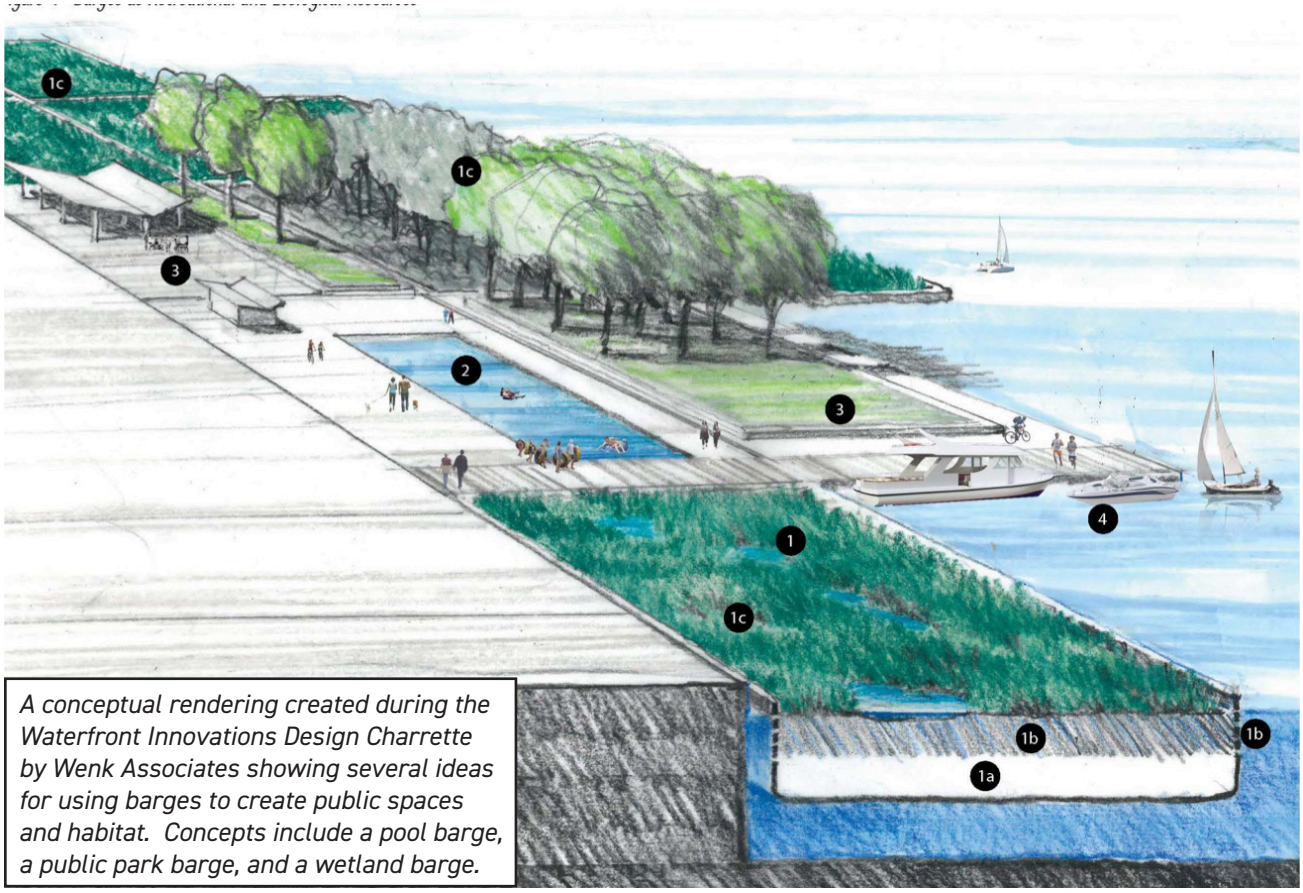
The Waterfront Innovations Design Charrette provided a variety of concepts for a built environment that is responsive to its waterfront location, and a modern waterfront that could serve the needs of industry while accommodating other uses. (See appendix for Charrette Report.) Concepts include:

- Public access to the waterfront when it is not in use for shipping;
- A porous dockwall that would provide the ability to dock ships, but could allow for the creation of wetland areas behind the wall;
- "Green fingers" stretching into the site to provide stormwater management, habitat, and landscaped public corridors;
- Barges docked along the waterfront providing ecological and recreational space.

An active, publicly accessible waterfront was a key component of charrette designs and of all public input received in the planning process. In response, the plans for this site as described in the East Greenfield Avenue Sub-District include a new linear waterfront park, roughly 7 acres in size, extending the length of these two sites. The park would be anchored at its north end by a new public plaza at the end of E. Greenfield Avenue, with a lookout tower, kayak launch, and water play space. The northern portion of the park, along 401 E. Greenfield, would be hardscaped to provide active recreational space and facilitate a potential future shift to shipping uses. The southern portion, along 311 E. Greenfield, would provide a more naturalized experience, and could vary in width or extend into the built environment.



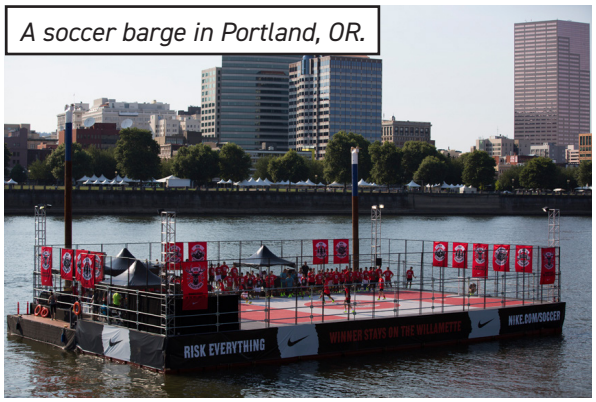
A conceptual rendering created during the Waterfront Innovations Design Charrette by Studio Gang Architects that shows how a dockwall could be perforated to allow water to flow to wetland habitat behind the dockwall while maintaining structural integrity of the dockwall for riverwalk amentieis and docking.



A conceptual rendering created during the Waterfront Innovations Design Charrette by Wenk Associates showing several ideas for using barges to create public spaces and habitat. Concepts include a pool barge, a public park barge, and a wetland barge.

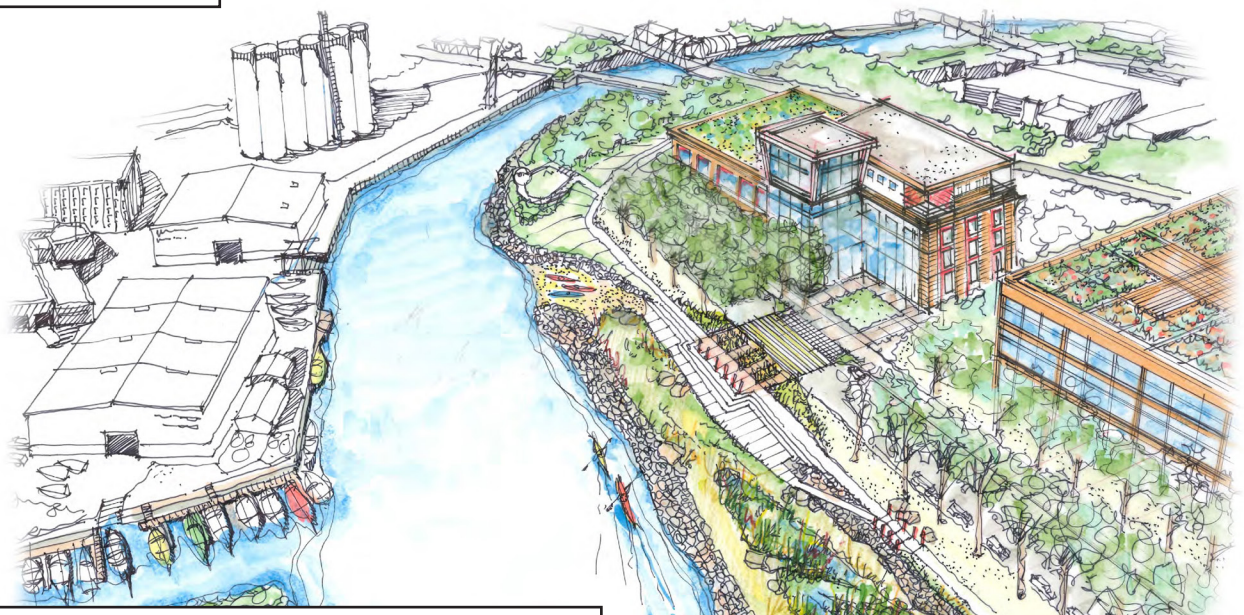
An outdoor classroom barge in Virginia.

A pool barge in Austria.



A soccer barge in Portland, OR.

Rendering by SEH



A conceptual rendering looking south on the Kinnickinnic River showing the proposed waterfront park on the south end of the 311 E. Greenfield Ave. property. This portion of the park would have a more natural feel with a natural sloping water's edge.

A former industrial dockland in Malmo, Sweden redeveloped as a mixed-use sustainable waterfront.

A conceptual rendering created during the Waterfront Innovations Design Charrette by Wenk Associates that shows a public riverwalk with a permeable dockwall with wetlands behind. The riverwalk structure would be designed to allow for large ship docking without disturbing the wetland habitat.

A Dense, Walkable Mixed-Use Waterfront

Much as the waterfront should demonstrate the successful coexistence of multiple uses, the built environment should offer a vision for how modern manufacturing can be incorporated into a green, walkable, urban environment. The following mix of uses are a preferred alternative.

Multi-story urban office space

Priority users include those that benefit from proximity to the UWM School of Freshwater Sciences, Rockwell, other anchor institutions, or water technology and research companies. Buildings could contain a mix of offices, laboratories, and/or research facilities. First floor water facing space should be reserved for uses that take advantage of the waterfront such as food service or water-related services (boat rental, etc.).

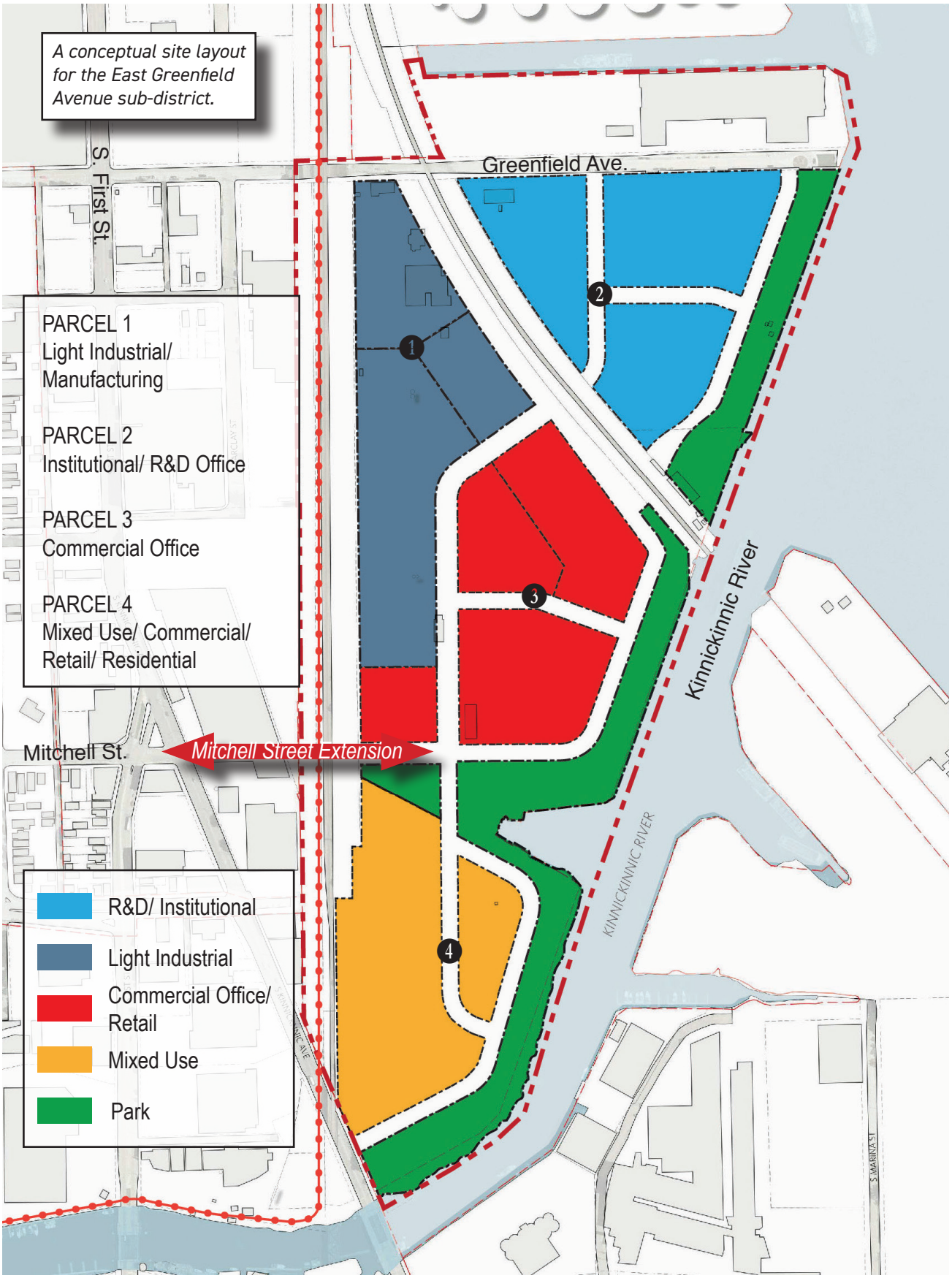
Modern, urban industrial park

Buildings would have smaller footprints (less than 75,000 square feet) than a typical new construction industrial building and would be arranged in a more compact manner. Potential users include small to mid-size food and beverage companies, other small to mid-size manufacturers or "makers", or research and development facilities for larger manufacturers located elsewhere in Milwaukee. An ideal user is a company that needs a mix of office, retail, and production or warehouse space, with the office or retail space activating the street facing portion of the building.

Menomonee Valley business with windows displaying their company's systems at work.

Smaller scale mixed-use commercial and residential

Buildings should connect to the residential neighborhoods of Bay View and Walker's Point and complement the smaller scale and natural edge of the river channel. Ideal first floor tenants would be food and beverage businesses taking advantage of southern exposure along the waterfront. This district could provide opportunities for live-work-sell type developments.


A conceptual site layout for the East Greenfield Avenue sub-district.
S. First St.
Greenfield Ave.
PARCEL 1
Light Industrial/
Manufacturing
PARCEL 2
Institutional/ R&D Office
PARCEL 3
Commercial Office
PARCEL 4
Mixed Use/ Commercial/
Retail/ Residential
Mitchell St.
Mitchell Street Extension
Kinnickinnic River
KINNICKINNIC RIVER
R&D/ Institutional
Light Industrial
Commercial Office/
Retail
Mixed Use
Park
1
2
3
4

Environmental Quality

Milwaukee has already had success in attracting new development to the Menomonee Valley, with its high-quality green space and restored river corridor. The Harbor District will also need to provide a compelling location in order to land high-quality new users.

Stormwater

These sites should model stormwater management that achieves targets well above regulatory requirements. Focus should be on preventing any pollutants from reaching the river. Additionally, stormwater treatment areas should be configured to serve as connections to the river for people and as habitat corridors.

Habitat

Regardless of the type of water edge (hardened or naturalized), this area can help provide aquatic and terrestrial habitat connectivity.

Steam/District Energy

The presence of the We Energies steam line, and the absence of much, if any, existing infrastructure, offers an opportunity to consider district energy systems. For instance, depending on eventual end users, waste process heat could be used to melt snow on roads and sidewalks; the avoided salt would be a significant benefit to adjoining waterways.

Access and Connectivity

Just minutes from downtown Milwaukee and from interstates heading north, south, and west, served by freight rail and Port Milwaukee, and with multiple bus routes just blocks away, the location is extraordinarily well connected. However, the immediate access is very poor and restricted to a single public street, East Greenfield Avenue, passing under a low rail bridge. New access and better connection to the city's street grid would have a transformative effect both on these sites and on the adjacent neighborhoods, providing improved access to jobs and to the river. Access improvements should be made as further described in Catalytic Project #4, Access and Mobility.

A conceptual rendering for the East Greenfield Avenue sub-district that shows the waterfront park, commercial office, and light industrial uses.

A conceptual rendering for the East Greenfield Avenue sub-district created during the Waterfront Innovations Design Charrette by DTAH. The concept includes flexible building types that can include a variety of uses, indoor parking, and shared greenspace and stormwater infrastructure.

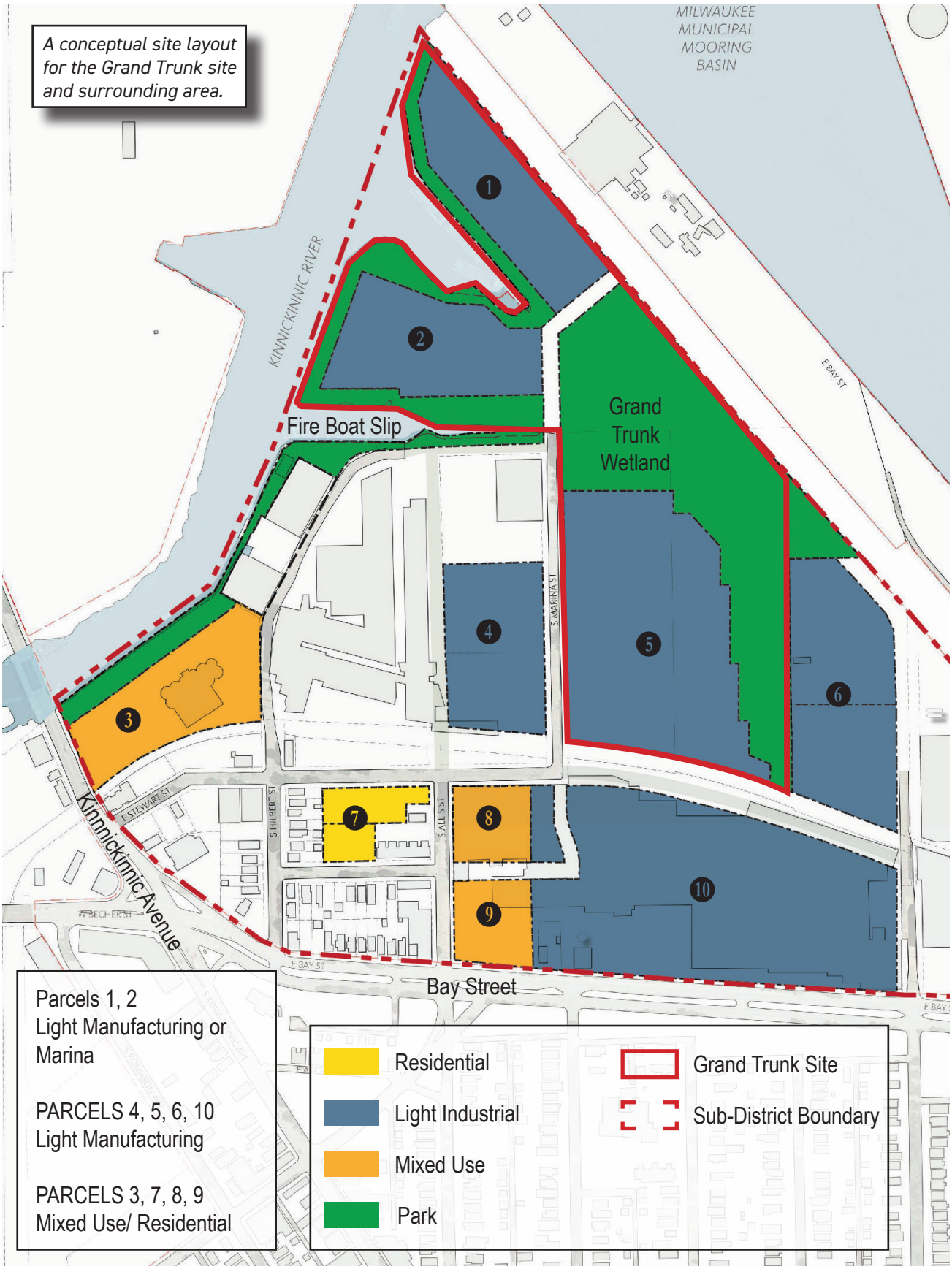
Grand Trunk Wetland and Development

The southern portion of the Harbor District provides the greatest opportunity to restore the natural wetland environment that historically occupied most of the area, while also providing space for new job-intensive light industrial users. While the area does not have as much vacant space as the East Greenfield Avenue District, there are substantial opportunities to create new habitat, public space, and development that will achieve many of the goals set forth in the Harbor District Water and Land Use Plan guiding principles.

The largest opportunity in this District is the Port Milwaukee-owned Grand Trunk site. The site is named after the former Grand Trunk Car Ferry, which operated on the site from 1905 until 1978 ferrying railroad cars across Lake Michigan to avoid Chicago congestion. A variety of other industrial and shipping activities and operations were located on the site in the twentieth century, although all buildings were razed and industrial operations ceased by the 1980s.

The entire Port Milwaukee owned Grand Trunk site is approximately 27 acres and includes more than 2,000 feet of waterfront. The waterfront portion of the site has been used in recent years for short term leasing primarily for businesses needing barge access for their operations. The southern portion of the site has been vacant and unused since the 1980s. The central portion of the site is home to an area of wetland that connects to the former Fire Boat Slip and the Kinnickinnic River.

Gravel stored on the north end of the Grand Trunk site. photo by Eddee Daniel


A conceptual site layout for the Grand Trunk site and surrounding area.
MILWAUKEE MUNICIPAL MOORING BASIN
KINNICKINNIC RIVER
Fire Boat Slip
Grand Trunk Wetland
Kinnickinnic Avenue
Bay Street
E BAY ST
E STEWART ST
W BECHER ST
S HILBERT ST
S ALLIS ST
S MARINA ST
1
2
3
4
5
6
7
8
9
10
Parcels 1, 2
Light Manufacturing or Marina
PARCELS 4, 5, 6, 10
Light Manufacturing
PARCELS 3, 7, 8, 9
Mixed Use/ Residential
Residential
Light Industrial
Mixed Use
Park
Grand Trunk Site
Sub-District Boundary

Land Use

The future vision for the Grand Trunk District is primarily to serve as a transition area between the heavily residential neighborhoods to the south and the more mixed use and industrial areas of Port Milwaukee and the Harbor District. The District will provide the largest area for new industrial development in the Harbor District, with new industry and public spaces serving as buffers for Port Milwaukee from incompatible land uses to the south and west.

Future land use recommendations for the Port Milwaukee owned Grand Trunk site are described below according to three development zones. Land use recommendations for the remainder of the Grand Trunk District are described in the Grand Trunk sub-district recommendations in chapter 5.

The Grand Trunk Site Northern Zone

The northern section of the Grand Trunk site is the area north of the former Fire Boat Slip and is approximately 11 acres and includes over 2,000 feet of waterfront. This area should be used for future light industrial development or recreational boating facilities. Should it be developed as new light industrial there should be an emphasis on users that benefit from locating close to the port or having access to the waterfront. The site's potential for recreational boating facilities was identified due to its waterfront access, location close to the harbor mouth, and density of recreational boating facilities nearby.

Regardless of the eventual use for this zone, the waterfront should include public access along the entirety of the waterfront and connected to public Riverwalk sections further south. Exceptions to the public space recommendation could be made should the site be developed as light industrial that includes users who engage in shipping or barge activity along the waterfront.

The Grand Trunk Site Central Zone

The central section of the Grand Trunk site includes the former Fire Boat Slip, primarily used as a launch point for Skipper Buds, and a historical wetland. The 6-acre wetland is the last remaining wetland in Milwaukee's Inner Harbor area, and has been the subject of planning efforts by the City of Milwaukee and the Wisconsin Department of Natural Resources.

Boardwalk through wetland habitat.

As of 2017, a habitat restoration design process building on significant public input and previous planning studies is taking place as part of the Milwaukee Estuary Area of Concern efforts to restore fish and wildlife habitat in the area. The restored wetland will provide spawning habitat for northern pike, a waterway connection between the wetland and the Kinnickinnic River, ephemeral ponds for reptiles and amphibians, and adjacent upland habitat improvements providing a buffer between the wetland and nearby developments.

The design and subsequent restoration are the first steps to sustaining a healthy wetland in this very

urban environment. However, additional planning is required to determine the best strategy for long-term stewardship of this unique urban wetland so that the cultural and ecological significance of the area are understood and honored. This step includes engaging many diverse partners to assist with the long-term maintenance, stewardship, and educational efforts. Priorities for the wetland once restored include maintaining the site's habitat and using the area as an educational resource for local schools, universities, and community organizations. Additionally, the wetland should connect to public Riverwalk segments along the Kinnickinnic River via a waterfront public shared-use path along the former Fire Boat Slip. Public access into the wetland itself, though, should be limited to designated and separated public paths, preferably boardwalks or elevated walkways, that allow visitors to explore the interior of the site without interfering with or damaging the sensitive ecosystems.

The Grand Trunk Site Southern Zone

The southern section of the Grand Trunk is approximately 9 acres of vacant land with frontage along South Marina Drive and a Canadian Pacific rail spur. This area should be developed as new light industrial with an emphasis on users that can benefit from locating close to Port Milwaukee and/or use the available railroad access. An updated wetland delineation is currently in progress that will inform the final wetland design and boundaries and may change the size of the developable land in this zone. If industrial development proves unfeasible based on site conditions, consider educational, civic, and ecological uses that complement the restored wetland

As the site is developed and surrounding properties change uses or are redeveloped, explore opportunities to improve public access and circulation by creating new public street right-of-way connecting East Stewart Street to South Aldrich Street through or adjacent to the Grand Trunk site. Public street right-of-way could follow the existing railroad on the north or south side of the tracks.

Grand Trunk Wetland conceptual site plan from Bay View Wetland Master Plan.

Access and Connectivity Improvements

The Harbor District is where almost every transportation mode in the Milwaukee area converges. Commercial shipping and pleasure craft ply the rivers and lake; freight and passenger trains roll along numerous rail lines; trucks, buses, and personal vehicles drive the streets and nearby highways, and growing numbers of bicyclists and pedestrians make use of bike lanes, sidewalks, and trails. Finding space for all of these users in such a small area is no small feat.

As one of the oldest parts of Milwaukee, much of the transportation infrastructure in the Harbor District is either in need of modernizing or no longer serving its original purpose. As an area that was built to serve primarily industrial and freight operations, many areas in the District are disconnected from surrounding neighborhoods by the very infrastructure that made the area desirable during Milwaukee's industrial heyday.

Further, the Harbor District is also home to the confluence of Milwaukee's three rivers, and their connection to Lake Michigan. This area serves as an important junction point for many species of fish whose various life cycles require time spent in both the Lake and the river systems. Strategic investments in updating and reorganizing infrastructure will be instrumental in unlocking the full potential of the Harbor District's future to provide improved connectivity for people, for freight, and for fish.

Conceptual rendering showing one option for reuse of the unused railroad swing bridge in the Milwaukee River as a bicycle/pedestrian bridge and public park. rendering by LA DALLMAN Architects Inc.

View looking east on Mitchell Street with South First Street and Kinnickinnic Avenue in the foreground.

Conceptual rendering showing Mitchell Street extended east from intersection at First and Kinnickinnic under the Canadian Pacific railroad and into the East Greenfield Avenue sub-district.

Street level view of redeveloped Kinnickinnic, First, and Mitchell intersection with Mitchell Street extension in the background.

Images above and to the right by UWM Community Design Solutions

Improved Access to Waterfront Areas

One of the greatest challenges to realizing the full potential of the East Greenfield Avenue and Grand Trunk catalytic projects is the limited access that exists at both sites from surrounding streets and neighborhoods. Providing additional public right-of-way access to these large and vacant waterfront areas will allow nearby residents and visitors to take full advantage of future employment and public space opportunities that will develop in these areas.

Access to East Greenfield Avenue Sub-District

As described in the East Greenfield Avenue catalytic project, the only public access to the East Greenfield Avenue sub-district is via East Greenfield Avenue on the far north end of the sub-district. This entrance has limitations as it's 13 feet and 5 inches of clearance is not sufficient for semi trucks to fit under. With the East Greenfield Avenue sub-district stretching more than a half mile from north to south with only one access point, it is very important that additional points of public access be identified and developed along the District's western boundary.

A small private entry point on the far south end of the Former Solvay Coke & Gas site should be developed as a new public right-of-way entrance into the sub-district. However, this additional access point suffers from the same issue as the Greenfield Avenue entrance, as it is located between two very low bridges (each under 13 feet) and would not provide full benefit to future developments in the sub-district if clearances remain unchanged at those two bridges.

An additional public access point should be developed on the west side of the East Greenfield Avenue sub-district both to address the restrictions on truck access and to better integrate this area into the city. Extending Mitchell Street to the east underneath the existing Canadian Pacific elevated railroad into the East Greenfield Avenue sub-district is the recommended access point, although further study may determine another point to be more appropriate. This new extension should be constructed to provide sufficient height for semi-trucks to pass underneath the Canadian Pacific railroad and enter the East Greenfield Avenue sub-district. Options to provide semi truck access via Greenfield Avenue should continue to be explored as well.

These new access points will allow people to enter into the area, but additional improvements will be needed to fully develop the area. There are currently no public right-of-ways in the East Greenfield Avenue sub-district aside from East Greenfield Avenue. A new street network should be designed and built to connect visitors to new waterfront public spaces and provide access and circulation to new developments throughout the site. New streets should be designed with complete streets principles in mind with special attention paid to the potential to connect bicyclists and pedestrians to waterfront shared-use paths, trucks to new businesses, and buses to new destinations closer to the waterfront.

Access to the Grand Trunk Site

As anyone who has visited Barnacle Bud's can attest, getting to and through the Grand Trunk sub-district is not without its challenges. The area is separated from Bay View by Bay Street and from neighborhoods to the north by the Kinnickinnic River. Circulation through the sub-district is

challenging as several streets dead end or turn into private drives. Improvements in the street network need to be made to support future development and public spaces.

Few visitors to the Grand Trunk sub-district may realize it, but the street used to access the businesses near the Fire Boat Slip is not a public right-of-way. South Hilbert Street terminates just north of its intersection with East Stewart Street and South Marina Drive terminates at the Grand Trunk Wetland.

To ensure that nearby residents and visitors have access to future employment opportunities and new waterfront public spaces, it is recommended that as redevelopment occurs, efforts are made to create new public right of ways that better connect the street grid and create new connections through this area. Hilbert, Allis and Stewart streets should all be evaluated for extension as new development and redevelopment occur. Recommended Riverwalk sections and a canoe/kayak launch along the Kinnickinnic River and the Fire Boat Slip will require this public right-of-way to ensure that visitors can access these new public amenities.

A new public street should be constructed from the current terminus of South Marina Drive into the Grand Trunk site to the north. This new street would provide access to future developments in the northern portion of the Grand Trunk site and provide improved access to the Grand Trunk Wetland.

To further improve access into and through the Grand Trunk sub-district, future planning should consider the potential for connecting East Stewart Street to South Aldrich Street along the Canadian Pacific Railroad Line. This connection would allow for additional access into the Grand Trunk Site from the east and would serve future industrial development on the south end of the Grand Trunk property.

Should the former Louis Allis Motor Company complex transition to a different use in the future, there is the potential to add additional north/south streets connecting East Bay Street with East Stewart Street through the property. These new street connections would be evaluated if and when the property transitions.

Bicycle and Pedestrian Connectivity

Located between several dense neighborhoods and downtown, the Harbor District has seen an increase in bicycle and pedestrian traffic in recent years with more and more people choosing to bike or walk to jobs and amenities in the area. However, as discussed previously, the legacy of existing transportation infrastructure in the District means that trips to or through the District can be disjointed or require zig-zagging towards a final destination to avoid railroads, canals, or dead-end streets.

To improve the biking and walking experience to and through the Harbor District a dedicated bicycle and walking route should be created from Bay View to Downtown with frequent connections to Near South Side neighborhoods to the west. Implementation of this recommendation began with the development of the first sections of the Kinnickinnic River Trail in 2011. However, gaps in the trail remain that need to be addressed to deliver a continuous safe biking experience through the entire Harbor District.


Access and Connectivity Improvements
Harbor District
Potential New Streets
Existing Off-Street or Protected Bicycle Routes
Potential New Off-Street or Protected Bicycle Routes
Canoe/Kayak Launch
Trailered Boat Launch
Aquatic Habitat Improvement
Hank Aaron State Trail
Pittsburgh St
Florida St
First St
Water St
Milwaukee River
National Ave
Washington St
INTERSTATE 794
UWM Slip
Greenfield Ave
Second St
KK River Trail
Kinnickinnic River
Jones Island
Mitchell St
Lake Michigan
Grand Trunk Wetland
Becher St
Bay St
Confined Disposal Facility
First St
KK River Habitat Improvements
Lincoln Ave
Kinnickinnic Ave
KK River Trail
INTERSTATE WISCONSIN 43
INTERSTATE 94
Chase Ave
Oak Leaf Trail

Kinnickinnic River Trail - South Gap

The southern off-street portion of the Kinnickinnic River Trail begins outside the Harbor District at 6th and Rosedale Street and follows the Kinnickinnic River northeast before ending at South First Street and Lincoln Avenue. From this point bicyclists must ride north on First Street to Maple Street and then take Maple Street east across Kinnickinnic Avenue to the northern off-street portion of the Kinnickinnic River Trail. This route is problematic for several reasons, but most notably because the intersection at Maple and Kinnickinnic is not regulated and has proven dangerous to bikers crossing. This gap in the Kinnickinnic River Trail needs to be addressed to provide a safe route between the two off-street sections of the Trail.

Several options exist for completing this section of the trail, with further analysis and investigation needed to identify a final route. The three most likely options for completing this segment of the trail are outlined below. It is also possible that a combination of different elements from these options would be the most appropriate solution.

Option 1

Continue with the current on-street route along First and Maple Streets, but with added infrastructure such as an on-street protected bicycle lane. At the Maple Street and Kinnickinnic Avenue intersection, a controlled intersection should be implemented to provide bicyclists with a method of safely crossing the street.

Option 2

Acquire the former rail right-of-way that runs north/south between South First Street and the Canadian Pacific Railroad to continue the Kinnickinnic River Trail off-street from its current terminus at Lincoln Avenue to the northern section at Maple Street. This would include building a new bridge structure over the Kinnickinnic River and another bridge over Kinnickinnic Avenue.

Option 3

From the current Trail terminus at Lincoln Avenue, travel west along Lincoln Avenue across the Kinnickinnic River and follow the west side of the River to meet up with the KK River Trail at Kinnickinnic and Maple.

Kinnickinnic River Trail - North Gap

The northern off-street portion of the Kinnickinnic River Trail begins at Maple Street east of Kinnickinnic Avenue and travels north to its terminus at Washington Street. From this point bicyclists must travel along Washington Street to cross under the Canadian Pacific elevated railroad and then travel north along South Water Street to Pittsburgh Street and points north. This on-street portion is not as challenging as the southern gap as there are low traffic volumes and few dangerous intersections, but railroad tracks remaining in the roadway are a serious hazard that have injured numerous bicyclists.

There are two options for completing the northern section of the Kinnickinnic River Trail. Future analysis should determine which route is preferred or if both options should be pursued.

Option 1

Maintain the current on-street route but make improvements to ensure the route is dedicated and protected. Key changes would be the use of bollards to protect bicyclists, pavement markers, and the removal of unused rail spurs in the right-of-way.

Option 2

Immediately east of the Washington Street railroad underpass develop an off-street trail that would follow the west side of South Water Street and the railroad right-of-way north. This route would go over National Avenue on the easternmost railroad bridge and travel north between the We Energies property and V Marchese before terminating near the intersection of South Water and Florida Streets. From this point north it would continue as an on-street protected bicycle lane in the same manner as option 1.

Kinnickinnic River Trail - East/West Connections

While the Kinnickinnic River Trail improvements described above would address many of the north/south route needs, the densest population of potential trail users are located to the west in the neighborhoods of the Near South Side. Improving bicycle and walking connections from the Near South Side into the Harbor District will allow nearby residents to access potential new jobs in the Harbor District and downtown along with new public spaces located along the waterfront.

Pittsburgh Avenue is the route of the Hank Aaron State Trail and Oak Leaf Trail into the Third Ward and has already been identified by the City of Milwaukee as a potential route for an on-street protected bicycle lane. Creating a protected bicycle lane along this stretch would provide a safe and more identifiable route for the thousands of bicyclists who use the Hank Aaron State Trail each year to travel to the Harbor District, Third Ward, or downtown.

Washington and Maple Streets have been previously identified by the City of Milwaukee as potential improved bicycle routes across the Near South Side and should be explored as potential "bicycle boulevards" (also known as a local street bikeway). As streets that are not major arterials that cross Interstate 94/43 they are ideal routes for east/west travel from the Near South Side into the Harbor District and connecting with the Kinnickinnic River Trail.

Kinnickinnic River Trail - Bay View Connection

Completing the Kinnickinnic River Trail will provide a much improved connection for residents who live close to the Kinnickinnic River. However, the majority of bicyclists travelling to the Harbor District from the Bay View neighborhood and points southeast enter via South Kinnickinnic Avenue. An improved route needs to be developed that takes bicyclists from the terminus of the Bay Street raised bicycle lane to the Kinnickinnic River Trail at Maple Street. Improvements could be a raised bicycle lane, a protected bicycle lane, or a two-way cycle track.

Paddling and Boating Connectivity

Milwaukee's urban waterways have seen a steady uptick in paddling and recreational boating in recent years, a trend which is expected to continue. As the City continues to rediscover and reestablish a recreational connection to its urban waterways, new issues, opportunities, and challenges will arise.

With only one public boat launch, a handful locations to pull a boat over in case of an emergency, and most of the waterfront constructed of vertical sheet piling, safety for those on the water is a major concern. A robust recreational boating network will require improved water access points, new signage directing water users to safe routes and exits, and other boater education aimed at reducing conflicts between recreational and commercial vessels.

Education on safe waterway use should be directed to all users including the paddling community, pleasure craft, research and agency vessels, and freighters. Outreach and education, especially around safety and access, should build on current efforts of the Milwaukee Urban Water Trail and the Harbor Safety Committee.

At least four new canoe/kayak launch points, improvements to the Bruce Street boat ramp, and a new public boat launch will provide an expanded network of access and exit points for recreational paddlers and boaters throughout the Harbor District.

Aquatic and Terrestrial Habitat Connectivity

The Harbor District is home to the confluence of Milwaukee's three rivers, a feature of importance to shipping, boating, recreation, and fishing. The connection between Lake Michigan, Milwaukee's rivers, and other nearshore areas is becoming increasingly important from an ecological perspective.

Many partners in Milwaukee have restored - and continue to do so - stretches of the City's urban river systems. At the same time, Lake Michigan's ecosystem is evolving to include more nearshore fish species, some of which rely on the river systems for spawning, nursery habitat, and/or foraging opportunities. However, the Inner Harbor is an inhospitable place for most fish to live, or even in some cases, to just travel through. While some fish can easily make the trip from Lake Michigan, through the Inner Harbor, and up the various rivers, smaller and younger fish have greater difficulty navigating through the altered waterway of the Inner Harbor.

The shape of the Inner Harbor, with its deep, dredged bottom and its vertical walls, is devoid of natural shoreline and associated habitat features. Steel sheet piling and concrete lined walls provide very little space for fish to find cover, shelter from predators, or food. To address this problem, creative habitat solutions are needed to balance the needs of an active Port, while also improving connectivity for fish traveling between the three rivers and Lake Michigan.

Several habitat restoration and rehabilitation efforts are described in this Plan, including habitat rehabilitation in the Kinnickinnic River from Becher Street to I-94, restoration of the Grand Trunk Wetland for northern pike spawning, and additional constructed wetlands at both the former Solvay Coke property and at the School of Freshwater Sciences. These restoration efforts will provide more habitat for fish, birds, and other wildlife, but these larger scale projects need to be carefully connected with smaller habitat features for improved connectivity between high-quality habitat locations. Some

examples of small scale habitat features include "Habitat Hotels" (see page 72) or other modifications to the steel sheet piling to provide cover, shelter, foraging opportunities, and aquatic vegetation.

In addition to shoreline and aquatic habitat improvements, terrestrial habitat connectivity is also of great importance to the area. In general, this can be achieved through a series of large-scale restoration efforts connected with corridors of trees and native vegetation.

Large-scale habitat restorations for the Harbor District include restoring the Grand Trunk Wetland and associated upland habitat, improving riparian habitat along the Kinnickinnic River, and naturalizing the southern edge of the East Greenfield Avenue waterfront park. To help with connectivity of these habitat spaces, new bicycle, trail, and road networks should include vegetated edges: trees, native landscaping, or bioswales. Green infrastructure should be encouraged as way to improve connectivity of habitat while also providing improved aesthetic and water quality benefits as well. Further, private properties have a role to play in improving terrestrial habitat as well. Native landscaping and vegetation which provides habitat for birds, butterflies and other pollinators should be favored over grass lawns whenever possible.